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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| (51) International Patent Classification <sup>3</sup> :<br><br>A41B 13/02   | A1  | (11) International Publication Number: WO 83/ 04163<br>(43) International Publication Date: 8 December 1983 (08.12.83) |
| <p>(21) International Application Number: PCT/AU83/00056</p> <p>(22) International Filing Date: 6 May 1983 (06.05.83)</p> <p>(31) Priority Application Number: PF 4208</p> <p>(32) Priority Date: 28 May 1982 (28.05.82)</p> <p>(33) Priority Country: AU</p> <p>(71)(72) Applicants and Inventors: BROWN, David, Stanley [AU/AU]; BROWN, Mary [AU/AU]; 32 Alawara Drive, Worongary, Via Mudgeeraba, QLD 4213 (AU).</p> <p>(74) Agent: T.G. AHEARN &amp; CO.; Patent and Trade Mark Attorneys, 85 Eagle Street, Brisbane, QLD 4000 (AU).</p> <p>(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), FR (European patent), GB (European patent), LU (European patent), NL (European patent), SE (European patent), US.</p>   | <p>Published<br/><i>With a revised version of the international search report.</i></p> <p>Date of publication of the revised version of the international search report: 26 April 1984 (26.04.84)</p> |  |
| <p>(54) Title: NAPPIES</p> <div data-bbox="633 1302 1120 1617" data-label="Image"> <p>The diagram shows a nappy (10) with a front portion (14) and a rear portion (15). The front portion has two flaps (12, 13) and two connection points (25, 26). The rear portion has two lengths of filamentary material (16, 17) attached at opposite upper edges (20, 22). The flaps (12, 13) are shown folded up between a child's legs. The connecting filaments (16, 17) are passed through the connection points (25, 26) and tied in place (31). Other labels include 11, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 31, and 10.</p> </div> <p>(57) Abstract</p> <p>A nappy formed with front and rear portions, the front portion (14) being provided with connection points (25, 26) through which filamentary material may be passed and the rear portion (15) being provided with two lengths of filamentary material (16, 17) attached at opposite upper edges (20, 22) of the rear flap so that in application the nappy is fixed by drawing the front flaps up between a child's legs to meet with the opposite sides of the rear flap folded around the child. The connecting filaments (16, 17) are passed through the connecting points (25, 26) and tied in place (31).</p> |   |  |

\* (Referred to in PCT Gazette No. 11/1984, Section II)

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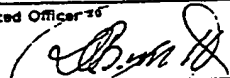
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# INTERNATIONAL SEARCH REPORT

International Application No PCT/AU 83/00056

|  |  |                                     |
|--|--|-------------------------------------|
| <b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) <sup>3</sup>  |  |                                     |
| According to International Patent Classification (IPC) or to both National Classification and IPC  |  |                                     |
| Int. Cl. <sup>3</sup> A41B 13/02   |  |                                     |
| <b>II. FIELDS SEARCHED</b>   |  |                                     |
| Minimum Documentation Searched <sup>4</sup>  |  |                                     |
| Classification System  | Classification Symbols   |                                     |
| IPC  | A41B 13/02   |                                     |
| Documentation Searched other than Minimum Documentation<br>to the extent that such Documents are included in the Fields Searched <sup>4</sup>  |  |                                     |
| AU: IPC as above<br>Regd: Designs Class 02-01  |  |                                     |
| <b>III. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <sup>14</sup>  |  |                                     |
| Category <sup>*</sup>  | Citation of Document, <sup>14</sup> with indication, where appropriate, of the relevant passages <sup>15</sup> | Relevant to Claim No. <sup>16</sup> |
| X  | GB, A, 1377541 (SVEDBERG) 18 December 1974 (18.12.74)<br>(& FR, A, 2123383, & CH, A, 537711 & DE, A, 7102635)  | (1-4)                               |
| X  | US, A, 2931361 (SOSTRIN) 5 April 1960 (05.04.60)   | (1,2)                               |
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| X  | DE, A, 1814198 (HEINDRICH) 25 June 1970 (25.06.70)   | (1)                                 |
| X  | AU, A, Reg Design No 3142 (MUNNS) 14 May 1920 (14.05.20)   | (1)                                 |
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| Y  | US, A, 2837096 (LEVEILLEE) 3 June 1958 (03.06.58)  |                                     |
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| Y  | AU, A, 19419-48 (LEVEY) 24 February 1949 (24.02.49)  |                                     |
| Y  | GB, A, 538176 (ANDREWS) 23 July 1941 (23.07.41)  |                                     |
| (Continued)  |  |                                     |
| <p><sup>*</sup> Special categories of cited documents: <sup>13</sup></p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p> |  |                                     |
| <b>IV. CERTIFICATION</b>   |  |                                     |
| Date of the Actual Completion of the International Search <sup>1</sup>   | Date of Mailing of this International Search Report <sup>2</sup>   |                                     |
| 10 June 1983 (10.06.83)  | 17 June 1983 (17.6.83)   |                                     |
| International Searching Authority <sup>1</sup>   | Signature of Authorized Officer <sup>16</sup>  |                                     |
| Australian Patent Office   | D.B. CUPITT               |                                     |

| III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET) |  |                          |
|--|--|--------------------------|
| Category *   | Citation of Document, <sup>1</sup> with indication, where appropriate, of the relevant passages <sup>2</sup> | Relevant to Claim No. 10 |
| Y  | AU, A, 11304/47 (NEEDHAM) 15 April 1948 (15.04.48)   |                          |
| Y  | AU, B, 14258/47 (135313) (DIATEX CORPORATION OF CALIFORNIA) 4 September 1947 (04.09.47)                      |                          |
| Y  | AU, A, 35320/50 (TD & BEE LTD) 31 August 1950 (31.08.50)   |                          |
| A  | AU, B, 16162 (122058) (SHERLER) 5 September 1946 (05.09.46)  |                          |
| A  | AU, A, Reg Design No 21222 (WHETTON) 8 July 1943 (08.07.43)  |                          |
| A  | US, A, 1740973 (DIETZ) 24 December 1929 (24.12.29)   |                          |
| A  | US, A, 2274915 (WOITE) 3 March 1942 (03.03.42)   |                          |
| A  | US, A, 2366002 (CARDEN) 26 December 1944 (26.12.44)  |                          |
| A  | US, A, 2815026 (MEYER) 3 December 1957 (03.12.57)  |                          |
| A  | US, A, 2833282 (MOORE) 6 May 1958 (06.05.58)   |                          |
| A  | US, A, 2256510 (YOUNG) 23 September 1941 (23.09.41)  |                          |

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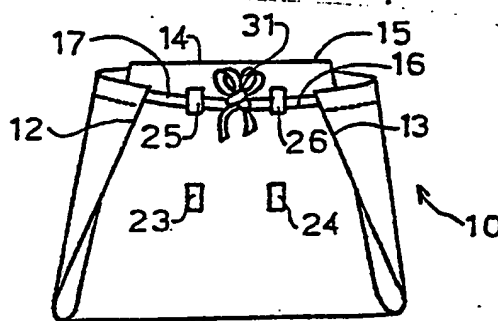
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(54) Title: NAPPIES



(57) Abstract

A nappy formed with front and rear portions, the front portion (14) being provided with connection points (25, 26) through which filamentary material may be passed and the rear portion (15) being provided with two lengths of filamentary material (16, 17) attached at opposite upper edges (20, 22) of the rear flap so that in application the nappy is fixed by drawing the front flaps up between a child's legs to meet with the opposite sides of the rear flap folded around the child. The connecting filaments (16, 17) are passed through the connecting points (25, 26) and tied in place (31).

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1.  
"NAPPIES"TECHNICAL FIELD OF THE INVENTION

THIS INVENTION relates to a nappy and more particularly to method whereby a nappy may be more conveniently affixed to a child therein.

BACKGROUND ART

The common flannel nappy requires folding and the insertion of a pin in order to affix it in place. Given the thicknesses of the folded material through which the pin must be pushed, care must be exercised in inserting the pin as the effort required to push it through the bulk of folded flannel is considerable. The more modern plastic backed disposable nappy utilises a readily placed adhesive strip to affix it on a child but this means is impracticable when reusable flannel nappies are employed and a washing cycle is involved; adhesive connectors would soon lose their adhesiveness during a washing process.

OUTLINE OF THE INVENTION

An object of the present invention is a nappy which does not require the employment of a pin to affix it in place upon a child. A further object of the invention is a nappy connection means which operates independently of the thickness of nappy materials employed in the nappy to which it is applied. Another object of the invention is a nappy connection means able to be adjusted to suit different baby sizes. An additional object of the invention is a nappy connection means applicable to reusable babies nappies. Other objects and advantages of this invention will hereinafter become apparent.

The invention achieves its objects by providing a nappy comprising inner and outer surfaces, said inner surface being the surface in contact with a child's skin when the nappy



## 2.

is applied thereto, said nappy being adapted for application wherein a front portion of said nappy is drawn up between a child's legs to meet two side flaps wrapped around the waist from the other side characterised in that said side flaps are provided near the top thereof with connecting means attached thereto which may be connected one to the other, said front portion being provided on its outside surface with at least one connection point for the receipt of at least one of said connecting means which is passed therethrough whence said connection means are interconnected such that said side flaps and said front portion are disconnectably affixed each one to the others.

BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings which illustrate a preferred embodiment thereof and wherein:-

Fig. 1 shows a view of a nappy according to the present invention;

Fig. 2 shows the nappy of Figure 1 in a part folded state; and

Fig. 3 shows the nappy of Figure 1 in its completed, folded state.

METHOD OF PERFORMANCE

Fig. 1 shows a view of a nappy 10 laid out flat and viewed from the side that is to contact a child's skin, the inner side of the nappy. The nappy 10 may be produced from any suitable material such as the commonly employed cotton flannels; polyester towelling; and other materials having adequate moisture retentive and absorbance properties. Cotton towelling is a useful material which provides a nappy having good breathing qualities. A number of layers of materials may be employed, and

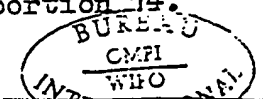




3.

conveniently two sheets, an inner and an outer facing sheet, might be employed with an absorbent material sandwiched therebetween such as the rectangle of added material shown at 11 in Fig. 1. This may comprise extra layers of material stitched between outer layers and ideally a thickness of four layers is developed. The inner facing sheet might be surfaced with the known nappy liners to assist its performance. The additional material might be sewn within inner and outer facing sheets or be inserted within a pocket therefor such that absorbent materials not normally able to withstand washing thereof may be employed, such as absorbent pads of cellulosic materials as employed in disposable nappies. New pads might be inserted within the nappy after each washing. Whatever material is employed for the reusable nappy it must be able to withstand the thorough washing processes employed thereon to maintain cleanliness thereof. A plastic outer covering might be employed but the material thereof must be suitable to withstand repeated washings. The use of a disposable or separately washable added pad will assist in enabling washing of the nappy.

The nappy 10 of Fig. 1 may be formed in the traditional, truncated isosceles triangle shape such that no folds are required therein prior to the nappies application to a child. Production of the nappy 10 in the truncated triangular shape does away with the awkward material bulk of the folded material of the common nappy square, to provide a more conveniently contoured and comfortable made up nappy. Thus nappy 10 comprises a front portion 14 to be folded up over the stomach and two side flaps 12 and 13 to be folded round the child's waist to meet in front with the front portion 14.



4.

Alternatively, to locate the tie point out of reach of the child the nappy might be applied the other way about to point the knot at the child's back. In this situation a nappy might be applied with the child face downwards and the front portion being brought up between the legs to the small of the back to locate the tie point there, away from the child's attention. Some reshaping of the front flap may then be needed to lengthen its top edge. Additional connection points might be provided along the lengthened upper edge for threading of the connecting means to provide adequate support along the length of the longer upper edge.

Conveniently, the nappy may be provided with a cord as the connection means by which the nappy is affixed in place although any other mechanical equivalent is equally applicable in the present invention. In Fig. 1 connection means 16 and 17 may be formed by a continuous cord, passed through the nappy top 15 through a pocket therein opening at each side of top 15 at openings 20 and 22. This cord may be fixed in place at 18 as by stitching. The pocket may be simply formed during the nappies manufacture by overlapping of an end and stitching at 19, or where two sheets are employed as inner and outer layers, by leaving the sides unstitched at 20 and 22 so that a cord may be inserted therebetween. By securing the cord at 18 only, the nappy may be gathered up on the cord to accommodate a range of waist sizes.

The nappy 10 might be formed in shapes other than that illustrated and might have the same dimensions top and bottom, with sides that narrow down to fit between the child's legs at their midpoints with the front and side flaps meeting together over each hip. The shape



## 5.

employed may therefore be that of a truncated isosceles triangle with its two sides given an inward curve to narrow the width of the nappy at that point which will lie between the legs. This provides a tight fit about the legs in use. A rectangular nappy shape might be employed with stitched pleats to produce a puckered narrowed portion to pass between the legs. Appropriate puckering, properly placed, may add extra material where it is most required for greater moisture absorbencies at a mid leg point.

In Fig. 2 the front portion 14 is shown folded upwards to reveal its outer surface whereon may be formed a number of connector points 23 to 26 which might be of the same material as is used for the connection means 16 and 17 stitched at each end to provide a tag through which the connection means 16 and 17 may be threaded. Four connection points are shown to enable the front portion 14 to be folded over at dotted line 27 to shorten the nappy for smaller children. Ideally the two connection points are provided, spaced as far apart as possible, otherwise the front flap will become folded into its centre in use to lessen its effectiveness.

In Fig. 3 the side flaps 12 and 13 are shown folded inwards to meet the front portion 14. The connection means 16 and 17 may be threaded through the connection points 25 and 26 to fix the nappy in a made up state. Obviously the tie point of the connection means 16 and 17 can be varied to accommodate a variety of waist sizes and by folding inwards of the front portion 14 other connection points can be brought into play for smaller bodies. A nappy might be produced to suit one body size and where the side flaps are such as to meet in front of a child's waist only one connection point need be

-6

supplied on the front portion 14. Where a square shaped nappy is used with a front portion 14 which meets side flaps 12 and 13 over the hips, connection points will be supplied at each corner of the front portion 14. Clearly the connection means and connection points might be of other forms and press studs might be employed. However press studs are inconvenient when adjustments for size are required as a range of connection points need to be provided and a means whereby the top portion 15 might be gathered up is desirable. The connection means 16 and 17 might be press studs applied to the end of a cord inserted, as illustrated, to meet with a row of studs along the front portion. However, for long life washing and ironing, a simple tie means such as that illustrated should achieve the best results.

As stated above the present concept might be presented in a range of shapes, with or without additional features such as nappy liners, plastic protective outer covers, absorbent inserts and a variety of connection means, whilst still retaining its reusable characteristic and greater convenience over the common pinned nappy.

While the above has been given by way of illustrative example, many modifications and variations as would be apparent to persons skilled in the art may be made thereto without departing from the broad scope and ambit of the invention as herein set forth and defined in the following claims.

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7.

CLAIMS

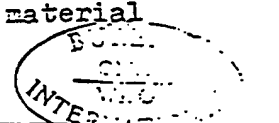
1. A nappy comprising inner and outer surfaces, said inner surface being the surface in contact with a child's skin when the nappy is applied thereto, said nappy being adapted for application wherein a front portion of said nappy is drawn up between a child's legs to meet two side flaps wrapped around the waist from the other side, characterised in that said side flaps are provided near the top thereof with connecting means attached thereto which may be connected one to the other, said front portion being provided on its outside surface with at least one connection point for the receipt of at least one of said connecting means which is passed there-through whence said connection means are interconnected such that said side flaps and said front portion are disconnectably affixed each one to the others.

2. A nappy as claimed in Claim 1 having a shape substantially that of a truncated isosceles triangle, the truncate apex forming the front portion and the two base corners forming the side flaps.

3. A nappy as claimed in Claim 2 wherein the tapering sides of said truncated isosceles nappy are provided with an inwardly directed curve which narrows the nappy width at a point which is to be passed between the legs.

4. A nappy as claimed in Claim 1 wherein said connecting means are lengths of a filamentary material suitable for tying and said connection points are short lengths of filamentary material fixed at at least each end thereof to provide at least one loop through which said connecting means may be threaded.

5. A nappy as claimed in Claim 4 wherein said connecting means on both sides of the nappy comprise a single filamentary length of material



8.

passed through a continuous pocket formed along the rear upper edge of the nappy and connected to said nappy at the centre of said pocket.

6. A nappy as claimed in Claim 1 wherein additional moisture absorbent material is built into the nappy by fixing additional layers of material to the inner or outer surfaces, or between said surfaces, at selected points.

7. A nappy as claimed in Claim 4, wherein said connection points are formed in spaced apart pairs, one of each pair being on opposite sides of said front portion, the pairs of connection points being provided in spaced apart locations down the front of said nappy.

8. A nappy as claimed in Claim 7 wherein said connection points are provided by fixing a pair of filament lengths down opposite sides of the outside surface of the front portion of the nappy and fixing the filaments at both ends to the nappy surface and at intermediate points therealong to create a number of loops through which the connecting means may be threaded.



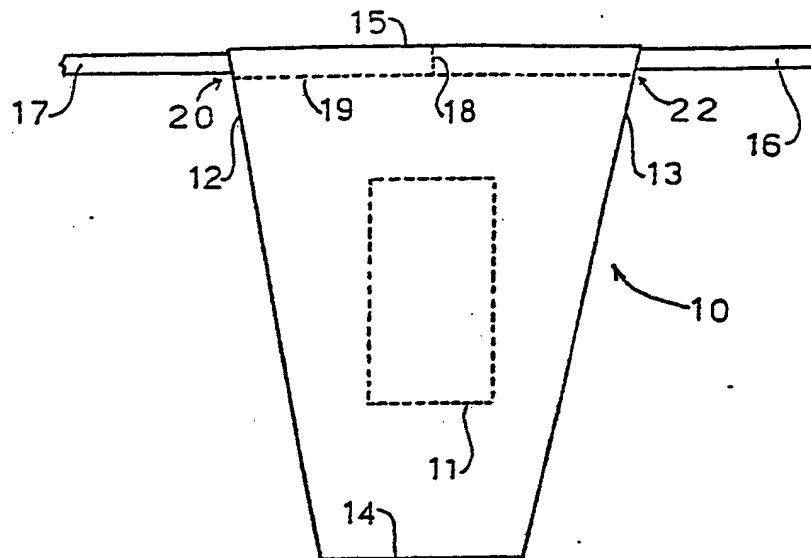


FIG 1

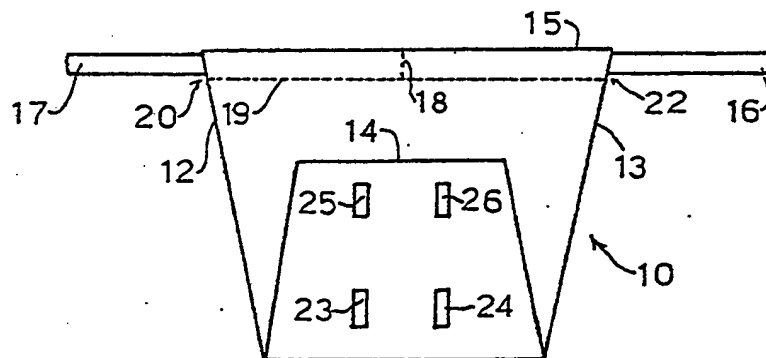


FIG 2

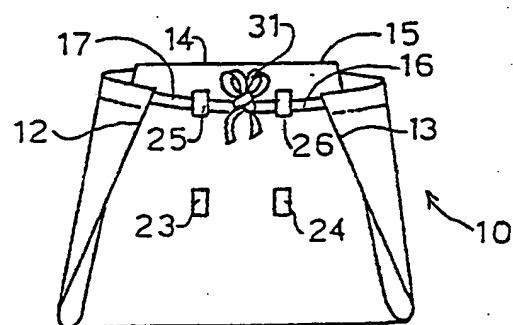
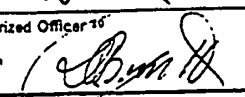


FIG 3

# INTERNATIONAL SEARCH REPORT

International Application No PCT/AU 83/00056

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| Y   | GB, A, 538176 (ANDREWS) 23 July 1941 (23.07.41)  |                                     |
| (Continued)   |  |                                     |
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| <b>IV. CERTIFICATION</b>  |  |                                     |
| Date of the Actual Completion of the International Search <sup>1</sup>  | Date of Mailing of this International Search Report <sup>1</sup>   |                                     |
| 10 June 1983 (10.06.83)   | 17 June 1983 (17.6.83)   |                                     |
| International Searching Authority <sup>1</sup>  | Signature of Authorized Officer <sup>16</sup>  |                                     |
| Australian Patent Office  | D.B. CLPITT                |                                     |